



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/619,051	07/18/2000	Robert S. Blackmore	POU920000126US1	9648

7590 09/08/2005

Lawrence D Cutter  
IBM Corporation IPLAW  
2455 South Road  
M/S P 386  
Poughkeepsie, NY 12601

EXAMINER

STRANGE, AARON N

ART UNIT PAPER NUMBER

2153

DATE MAILED: 09/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/619,051

Applicant(s)

BLACKMORE ET AL

Examiner

Aaron Strange

Art Unit

2153

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Arguments***

1. In view of the substitute appeal brief filed on 6/16/2005, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

- (1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,
- (2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

2. With regard to Applicant's assertion that Sethuram fails to disclose transferring data into "target memory locations" (Pages 5-7, "User Directed Target Determination" of substitute appeal brief filed 6/16/05), the Examiner respectfully disagrees. Sethuram clearly discloses that the incoming cells are assembled "directly in the host memory" (at least Col 4, Lines 1-11) and that the incoming data is "directly transferred into the appropriate buffer in the host memory" (Col 6, Lines 44-46). The host memory locations where the data is transferred clearly meet the limitation of a "target memory location".

With regard to Applicant's assertion that "These buffers are known to the

operating system but they are not directly accessible by end users or application level programs" (Page 7, Lines 2-3 of supplemental appeal brief), it is noted that such limitations do not appear in the rejected claims. The currently claims only require that the memory locations be "target memory locations". Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Despite the fact that the claims do not require that the target memory locations are application memory locations, such a limitation has been addressed below in the interest of expedited prosecution.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sethuram et al. (US 5,828,903) in view of Ayanoglu et al. (US 6,122,759) in further view of Gentry et al. (US 5,778,180).

5. With regard to claim 1, Sethuram shows as system for transferring data between a network and host coupled to the network using a host adapter. The adapter is

situated between the network and host system, wherein the adapter has a DMA engine and local memory. Sethuram shows:

transmitting incoming message from first data processing system (100-103) to a temporary memory (fig. 2b, 204) in an adapter, which is connected to said second data processing (host device) system (col. 4 lines 1-11);

transferring, from said adapter to said second data processing system, an indication that said temporary memory in said adapter contains the message received from said first data processing system (col. 9 lines 21-23);

transferring, from said second data processing system to said adapter, real address information (virtual register mapping to the host buffer) indicating desired target memory locations (host buffer) for said message (col. 4 lines 33-44, col. 4 line 57- col. 5 line 1, Note that each virtual register (VR1-VR8) maps to a free buffer (B1-B8), see col. 5 lines 15-20, fig. 3a and 3b);

transferring said message, from said temporary memory in said adapter, directly into said target memory locations in the memory of said second data processing system, said transfer occurring via direct memory access (col. 6 line 22-30 and 44-46);

and transferring, from said adapter to said second data processing system, an indication that said target locations now contain the message received from said first data processing system (col. 6 line 54-56).

While the messages received by the second data processing system in the system disclosed by Sethuram were almost certainly acknowledged, Sethuram fails to specifically recite transmitting an acknowledgement of receipt of said message from

said second data processing system to said first data processing system. Sethuram also fails to specifically disclose that the target memory locations are application level memory locations. Nonetheless, these features are old and well-known in the art, as shown by Ayanoglu and Gentry.

Ayanoglu teaches the use of acknowledgements to ensure reliability of Asynchronous Transfer Mode (ATM) traffic over a wireless transmission link. Since wireless links can have a large number of errors (Col 19, Lines 13-16), using acknowledgements to inform the sender of which packets have been correctly received is extremely advantageous. Without using acknowledgements, it is very unlikely that a transmission will be completely and correctly received over a wireless link. In the case of common services such as file transfer, losing even a single packet can render the file unreadable.

Gentry discloses a similar system wherein data is copied directly into application memory from a network interface card, without being buffered in operating system level memory (Abstract; Col 2, Lines 46-67). This reduces the overhead when copying data received from a network to memory for an application executing on the receiving system.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to transfer the received messages directly into application memory from the network interface card in order to reduce the data copying overhead and increase overall system performance. It would have also been obvious to transmit an acknowledgement of receipt of said message from said second data processing

Art Unit: 2153

system to said first data processing system since it would have informed the first data processing system that the message had been completely and correctly received. This would have been especially advantageous when sending messages across wireless links, since they can have a large number of errors during transmission.

6. In referring to claim 2, Sethuram further discloses the step of advancing indicators in said first data processing system in preparation of transmitting another message, whereby a number of messages may be sent in rapid sequence (col. 9 lines 49-55).

7. In referring to claim 3, Sethuram shows:

establishing an association between said message and real address information indicating desired target memory locations for said memory (col. 5 lines 23-28 and col. 7 lines 26-41, Note that the virtual register can be associated with buffer on an "as needed" basis and the size of a packet data unit is determined in order to allocate the correct sized buffer);

transmitting incoming message from first data processing system (100-103) to a temporary memory (fig. 2b, 204) in an adapter, which is connected to said second data processing (host device) system (col. 4 lines 1-11).

transferring, from said adapter to said second data processing system, an indication that said temporary memory in said adapter contains the message received from said first data processing system (col. 9 lines 21-23).

transferring, from said second data processing system to said adapter, real address information (virtual register mapping to the host buffer, col. 4 lines 33-44, col. 4 line 57- col. 5 line 1, Note that each virtual register (VR1-VR8) maps to a free buffer (B1-B8), see col. 5 lines 15-20, fig. 3a and 3b).

transferring said message, from said temporary memory in said adapter, directly into said target memory locations in the memory of said second data processing system, said transfer occurring via direct memory access (col. 6 line 22-30 and 44-46).

transferring, from said adapter to said second data processing system, an indication that said target locations now contain the message received from said first data processing system (col. 6 line 54-56).

While the messages received by the second data processing system in the system disclosed by Sethuram were almost certainly acknowledged, Sethuram fails to specifically recite transmitting an acknowledgement of receipt of said message from said second data processing system to said first data processing system. Sethuram also fails to specifically disclose that the target memory locations are application level memory locations. Nonetheless, these features are old and well-known in the art, as shown by Ayanoglu and Gentry.

Ayanoglu teaches the use of acknowledgements to ensure reliability of Asynchronous Transfer Mode (ATM) traffic over a wireless transmission link. Since wireless links can have a large number of errors (Col 19, Lines 13-16), using acknowledgements to inform the sender of which packets have been correctly received is extremely advantageous. Without using acknowledgements, it is very unlikely that a



transmission will be completely and correctly received over a wireless link. In the case of common services such as file transfer, losing even a single packet can render the file unreadable.

Gentry discloses a similar system wherein data is copied directly into application memory from a network interface card, without being buffered in operating system level memory (Abstract; Col 2, Lines 46-67). This reduces the overhead when copying data received from a network to memory for an application executing on the receiving system.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to transfer the received messages directly into application memory from the network interface card in order to reduce the data copying overhead and increase overall system performance. It would have also been obvious to transmit an acknowledgement of receipt of said message from said second data processing system to said first data processing system since it would have informed the first data processing system that the message had been completely and correctly received. This would have been especially advantageous when sending messages across wireless links, since they can have a large number of errors during transmission.

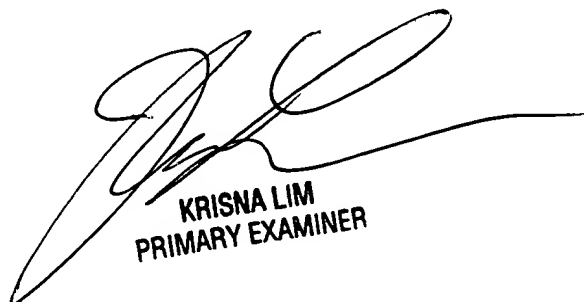
### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron Strange whose telephone number is 571-272-3959. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glen Burgess can be reached on 571-272-3949. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AS  
8/23/2005



KRISNA LIM  
PRIMARY EXAMINER